5. Introduction

Transportation facilities have had a profound effect on the development of Augusta and Richmond County. From pre-colonial times to the present trails, road, railroads, waterways, and air service have all influenced the timing, location and extent of development in the community.

This chapter includes an inventory and assessment of transportation facilities and services in Augusta and Richmond County. Transportation facilities include roads, sidewalks, bikeways, airports and railroad lines. Transportation services include the public transit system.

5.1 Roadway Network

A street network that includes two interstate highways, four federal highways, ten state routes, and numerous local roads serves Augusta-Richmond County. Streets have varying functions, so the street network is generally divided into four categories: freeways, arterials, collectors and local streets. Design standards vary from one functional class to another. For example, an arterial road has more travel lanes, a higher operating speed, and fewer curb cuts than a local street. The basic characteristics of the functional classification system are outlined below.

Functional classification is not static. As roads have been widened or extended, their functional classification has been changed to reflect their new role. Examples of roads that have been widened or extended in the last 10-15 years include Wheeler Road, Deans Bridge Road, Gordon Highway, and Windsor Spring Road. New construction has resulted in the addition of the Jimmie Dyess Parkway and River Watch Parkway to the list of arterial roads. Planned road widening projects such as on Windsor Spring Road south of Tobacco Road will result in other changes to the system. In anticipation of this change, it is desirable to coordinate right-of-way acquisition, land-use planning, access and zoning activities with this change in mind.

5.1.1 Interstates, Freeways and Expressways

Freeways are limited access, multi-lane, divided roadways carrying high-speed traffic. Two freeways - Interstate 20 and Interstate 520, serve Richmond County. I-20 crosses the northwest corner of the county and connects Augusta to Columbia, South Carolina and Atlanta. Interchanges are located at River Watch parkway, Washington Road, I-520, and Wheeler Road. The River Watch Parkway interchange opened in 1993 and the Wheeler Road interchange opened in 1998. Other I-20 interchanges are located in Columbia and Aiken (S.C.) Counties and connect to other parts of the metropolitan area. Interstate 520 (a.k.a. the Bobby Jones Expressway) is a circumferential route extending from I-20 to Laney-Walker Blvd. Interchanges are located at I-20, Wheeler Road, Wrightsboro Road, Gordon Highway, Deans Bridge Road, Windsor Spring/Peach Orchard Rd., Mike Padgett Hwy. (SR56), Doug Barnard Pkwy., (SR 56 Loop), and

Laney Walker Blvd. The section between Doug Barnard Parkway and Laney-Walker Blvd. opened to traffic in July 1998. The section of the Bobby Jones between I-20 and Gordon Highway was widened from four to six lanes in 2001. A 0.89-mile extension of Bobby Jones, from Laney Walker Blvd. to the Savannah River, is currently under construction. A companion bridge project over the river is also under construction.

River Watch Parkway (SR 104) is a four-lane, divided, controlled access facility that currently extends from 15th Street near down Augusta to Pleasant Home Road near the Columbia County line. The first phase of River Watch, between 15th St. and I-20, opened to traffic in 1991. The second phase, from I-20 to Pleasant Home Road was completed in 1993. A third phase, extending the parkway .57 miles to the Baston Road intersection, is currently under construction. River Watch Parkway was built to relieve congestion on Washington Road and carries a good deal of commuter traffic to and from west Augusta and Columbia County.

The John C. Calhoun Expressway is a four-lane, divided limited access road that links Washington Road to Greene Street in downtown Augusta. Built in the mid-1970s as an alternative route to and from downtown, the Calhoun Expressway includes a half-diamond interchange with 15th Street and a split-diamond interchange with Eve Street and Crawford Avenue. When first constructed the expressway extended from Washington Road to 15th Street. In 1984 the elevated part of the expressway, between 15th and Greene Streets, was opened to traffic.

5.1.2 Arterials

Arterial roads are designed to move large volumes of traffic through and across an urban area, and collect and distribute traffic to and from smaller streets. Several arterials, such as Washington Road, Wheeler Road, Wrightsboro Road, Deans Bridge Road and Peach Orchard Road, have interchanges with I-20 and I-520. Other arterials, such as 13th Street, Sand Bar Ferry Road, and Gordon Highway, provide connections across the Savannah River into Aiken County.

The Federal Highway Administration's Highway Functional Classification System splits arterial roads into two subgroups: major and minor arterials. Major arterials, also known as principal arterials, move larger volumes of traffic over long distances at high speeds. In Richmond County there are 18 roads or road segments classified as major or principal arterials. Examples include Washington Road, Jimmie Dyess Parkway, Gordon Highway, Peach Orchard Road, Mike Padgett Highway, Doug Barnard Parkway and Tobacco Road.

Minor arterials serve trips of moderate length at lower speeds than major arterials. Traffic volumes are lower and cross streets and driveways are spaced closer together than on major arterials. There are 38 road segments classified as minor arterials in the county. They are scattered throughout the community and include Broad St., Laney-Walker Blvd., Berckmans Rd., Richmond Hill Rd., and Old Waynesboro Road.

5.1.3 Collectors

The primary function of collector roads is to move traffic from local streets to arterials and freeways. Collectors also provide access to some traffic generator, such as shopping centers, schools, and recreation facilities. Traffic volumes and speeds tend to be lower than on the arterials. Under FHWA's Functional Classification System there are currently 53 roads or road segments in Richmond County classified as collectors. Examples include East Boundary, James Brown Blvd., Rozier Rd., Willis Foreman Rd., Golden Camp Rd., and Alexander Drive.

5.1.4 Local Roads

The primary function of local roads is to provide access to adjoining property for both vehicles and pedestrians. Generally, local roads are 2-lane facilities on a 50-60-foot right-of-way that carry low traffic volumes and have frequent curb cuts. All roads not classified as collectors, arterials or freeways are considered local roads. In Richmond County there are over 1,000 miles of local roads.

5.2 Rail Transportation

Passenger rail service is not available in Augusta at the present time. In 1999 the Georgia Transportation Board approved a long-range plan to provide inter-city passenger rail service between Atlanta and other major cities in the State.

Freight service is provided by two railroads: Norfolk Southern and CSX Transportation, Inc. The Norfolk Southern main line track enters the City from the north, crossing the Savannah River and then continuing through downtown on the right-of-way of Sixth Street. The main line continues in a southeasterly direction through the rest of the City and on toward Savannah. Norfolk Southern has two railroad yards in the City: one (the main classification yard) is approximately a mile south of downtown and a second (Nixon Yard) is south of Augusta Regional Airport near International Paper Company.

The CSX main line crosses Augusta in a roughly east-west direction. This line provides connections to Spartanburg, S.C. and Savannah, GA. A second CSX line, formerly owned by the Georgia Railroad, connects to Atlanta. Beltline service is provided to a number of industries. The CSX main railroad yard is located off Laney-Walker Blvd. southeast of downtown. The yard covers approximately 117 acres and consists of an inbound receiving yard and an outbound classification yard. A second yard, the Harrisonville Yard, is located on 48 acres between Wrightsboro Road and Olive Road.

At-grade railroad crossings are located on many roads in the city. The crossings have been a part of community life for many years, and solutions have been sought to reduce the inevitable conflicts between railroad, motor vehicle and pedestrian traffic. At the same time, availability of rail service is a major attraction for new industry and maintaining existing industry.

5.3 Air Transportation

There are two airports in Augusta: Augusta Regional Airport at Bush Field and Daniel Field. Augusta Regional Airport is a 1,500-acre commercial airport located at the intersection of Tobacco Road and Doug Barnard Parkway (SR 56 Spur). Major facilities include an 8,000-foot primary runway, a 6,000-foot crosswind runway, a terminal, an air traffic control tower, a facilities maintenance office, and a weather service station. Three commercial carriers serve Augusta Regional: Atlantic Southeast Airlines, US Airways Express and Continental Express. Atlantic Southeast provides service to Atlanta's Hartsfield International, while US Airways Express flies to Charlotte International. Continental Express, which began serving the Augusta market in March 2003, has flights to Houston and Newark. Augusta Regional Airport is operated under the direction of the 13-member Augusta Aviation Commission.

Daniel Field, located on a 152-acre site at the intersection of Wrightsboro Road and Highland Avenue, is a general aviation airport. Major facilities include two runways, two hangars, outdoor tie-down areas, and a control tower. Daniel Field was once the commercial airport for Augusta. Charter flights, flight training, airplane storage, and fuel and maintenance services are provided. Daniel Field is active year-round, but is especially busy in early April during the Masters ® Golf Tournament. The airport is operated under the direction of the 13-member General Aviation Commission.

5.4 Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities are important alternative modes of transportation in any community. Bicyclists use the road network on a regular basis, but currently there are no designated bike lanes, routes or bikeways in the county. Off-road facilities used by cyclists include the Augusta Canal towpath and the Savannah River levee. A fairly extensive network of sidewalks is present with the “old” city limits, but there are very few in the neighborhood and commercial centers of the former county. Sidewalks are located along some sections of the arterial and collector roads, but do not form a network that pedestrians can utilize. Sidewalks also are located adjacent to many of the public schools. Off-road facilities used by walkers and joggers include the Augusta Canal towpath, Savannah River levee, and paved trails at some county recreation centers. Where sidewalks are not present, especially on local or neighborhood streets, pedestrians simply walk in the road.

5.5 Public Transportation

Augusta Public Transit (APT) currently operates 12 fixed routes within the city with a peak fleet of 17 buses. The system is primarily radial with 10 routes terminating at the Transfer Facility at 1546 Broad Street. The remaining two routes, Barton Chapel and Lumpkin Road, terminate at a transfer point at Regency Mall, southwest of downtown. Service frequency and schedules vary, but generally APT buses run from about 6:00 a.m. until 6:00 p.m., Monday through Friday. Ten of the routes operate on Saturday. No service is provided on Sunday.

APT also operates paratransit services for disabled persons, in compliance with the Americans with Disabilities Act of 1990. In accordance with guidelines issued by the Federal Transit Administration (FTA), APT provides paratransit service within 3/4 mile of each fixed route during the same operating hours as the local service. Paratransit service is available only to certified eligible passengers. Currently, APT has 27 motor buses and five paratransit vehicles available for maximum service.

APT operates 10 of its routes from a Transfer facility at 1546 Broad Street, just west of downtown Augusta. Opened in 1991, the Transfer Facility includes a large indoor waiting area with benches, an information desk, restrooms, water fountains, a soft-drink vending machine, and a work area for APT staff. Covered breezeways flank either side of the building, and eight sawtooth parking bays provide space for the loading and unloading of bus riders. There are also parking spaces for 20 vehicles.

APT's offices and maintenance garage are housed in a facility located at 1535 Fenwick Street, about four blocks from the Transfer Facility. There are six maintenance bays and a detached building for vehicle cleaning at the garage. APT administrative and operations staff is housed in a 5,000 square foot building erected in 1993 as part of a renovation project. The property includes parking spaces for buses, paratransit vans, and staff and visitor vehicles. During the spring of 2002, the vehicle parking area was expanded to accommodate the paratransit vehicles.

The Barton Chapel and Lumpkin Road routes terminate at a transfer center at Regency Mall located about five miles southwest of downtown. The transfer center is a dedicated area on the outskirts of the mall property and consists of a sheltered waiting area for passengers. Bus shelters are located along all of the fixed routes. In addition to benches, the shelters feature space for advertising, trash receptacles and soft drink vending machines. In the fall of 2003, the transfer center was relocated from Regency Mall to the K-Mart Shopping Center on the opposite side of Gordon Highway.

5.6 Roadway Use and Conditions

This section summarizes the travel characteristics of city residents and the existing conditions of the road system. Road and bridge improvements are important to the community's future because they influence land use, economic development, and the quality of life.

5.6.1 Travel Characteristics

Sample data tabulated as part of the 2000 Census reveals some information about the travel characteristics of Richmond County households. Of the 73,920 households, approximately 88% have at least one vehicle (car, truck) available for use. The remaining 8,969 (12%) households had no vehicle available for use. These figures are not much different from 1990, when 87% of the households had at least one vehicle available for use by members of the household.

Data on means of transportation to work indicates a strong preference for Richmond County residents to commute by themselves (see Table T-1). More than 75% of workers drive to work alone. Another 15% carpool to work. Five percent walk to work and approximately one- percent use public transportation. The local bus system is the predominant public transportation mode in Augusta and Richmond County. Overall, the means of transportation to work remains similar to what it was in 1990. At that time, approximately 73% of workers drove alone, 16% carpooled, and 6% walked to work. The number of people working at home rose slightly from an estimated 1,156 in 1990 to 1,183 in 2000.

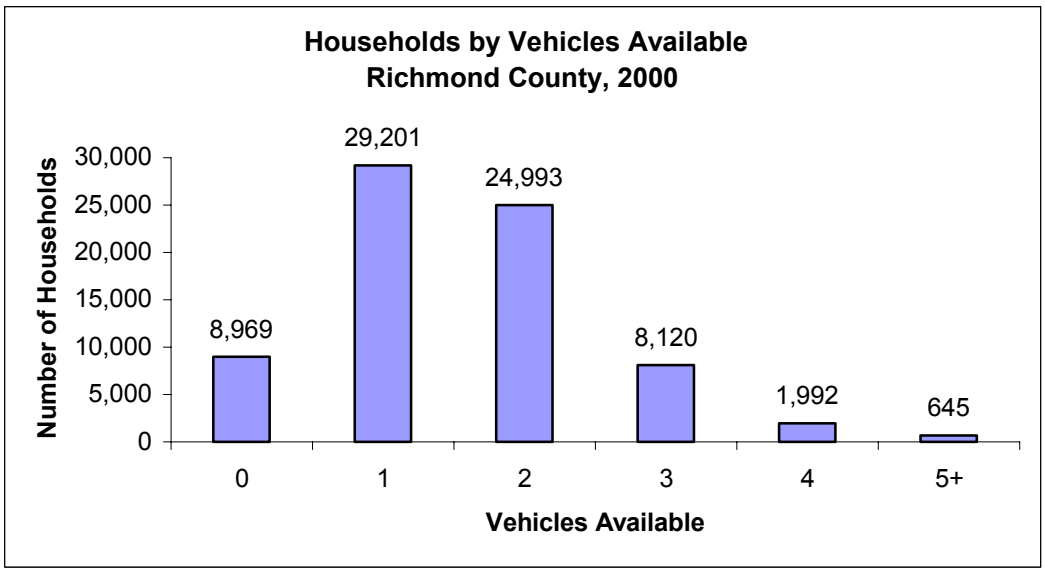
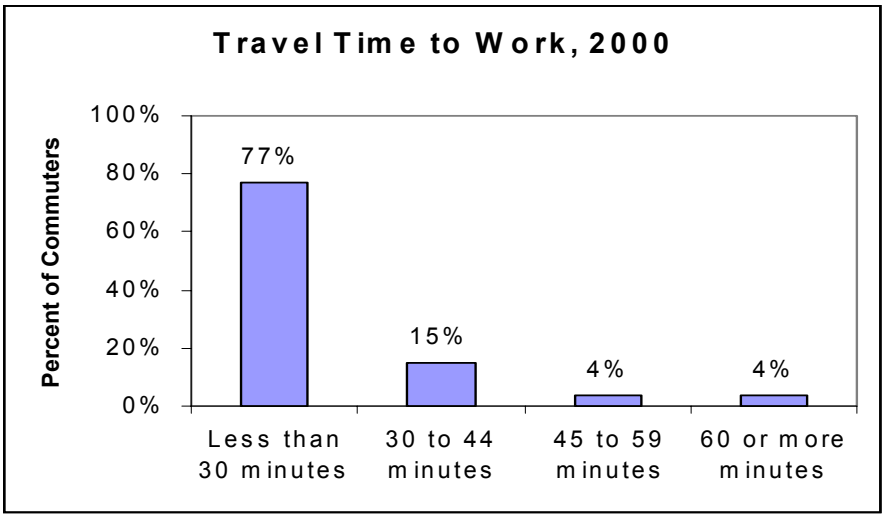


Table T-1
Means of Transportation to Work
Richmond County, 2000

Means of Transportation to Work	Number of Workers*	Percent of Workers
Drove alone	64,885	76%
Carpooled	12,415	15%
Public transportation:	1,126	1%
Bicycle	185	0%
Walked	4,204	5%
Worked at home	1,183	1%
Other means	851	1%
Total	**84,849**	**100%**

* Richmond County Residents
Source: U.S. Bureau of the Census, 2000, Sample Data

Travel time data indicate that the overwhelming majority of Richmond County residents commute less than 30 minutes to work. The following chart shows that 77% of workers commute less than 30 minutes and another 15% travel from 30-44 minutes each way to work. Only 8% of residents have commutes exceeding 45 minutes.



5.6.2 Street and Highway System

Conditions on the county's street and highway system were measured using the Level-of-service (LOS) outputs from the Augusta Regional Transportation Study's (ARTS) travel demand model. The ARTS travel demand model is a traditional four-step mathematical process involving trip generation, trip distribution, mode choice, and traffic assignment. Inputs to the model include data on existing conditions and projections of population, occupied housing units, employment, school enrollment and vehicles. Outputs include LOS calculations for road segments on the transportation network.

LOS standards for a road segment are based on the ratio of the daily traffic volume to the segment's daily capacity. This volume-to-capacity ratio is an indication of the amount of delay a driver would encounter on the road segment. This level of service is based upon travel delay and is expressed as letters "A" through "F", with "A" being the highest or best travel condition and "F" being the lowest or worst condition. Table T-2 shows the LOS standards and the corresponding volume-to-capacity ratios and average speeds for urban arterial roads.

Table T-2
Level-of-Service Standards for Urban Arterials

Level-of-Service	Volume-to-Capacity Ratio	Average Travel Speed
A	<0.50	>= 35 MPH
B	0.50 - 0.60	>= 28 MPH
C	0.60 - 0.75	>= 22 MPH
D	0.75 – 0.90	>= 17 MPH
E	0.90 – 1.00	>= 13 MPH
F	>=1.00	< 13 MPH

Source: Transportation Research Board, Highway Capacity Manual

The minimum level-of-service (LOS) designation that Augusta considers acceptable, in terms of planning for adequate capacity, is LOS "C". At LOS "C", the volume-to-capacity ratio is in the 0.60 to 0.75 range and average peak hour travel speeds on urban arterials are in the 22-28 miles-per-hour range. This LOS does not apply to rural arterial and collector streets.

Some of the notable street and highway system segments where the LOS is currently below "C" are listed in Table T-3. Not surprisingly, most are located in the urbanized part of the county. They include parts of the major arterial and collector roads that carry some of the highest volumes of traffic.

Another measure of the condition and efficiency of the street and highway system is travel time delay based on fieldwork. Since 1995 the staff of the ARTS has conducted annual travel time surveys on major arterials in the study area, including those located in the urbanized part of Richmond County. Travel runs are conducted during A.M. and P.M. peaks on each road corridor or segment. The average speed of each run is derived from the time it takes to complete the run, and is then compared to the posted speed limit for the road segment. The deviation of the average speed from the posted speed is a measure of congestion. The performance measures adopted by ARTS range from "Not Presently Congested", meaning that the average speed is equal to or above the posted speed limit, to "Seriously Congested", which are road segments on which the average speed is more than 30% below the posted speed limit. Table T-4 summarizes the CMS performance measures.

Table T-3
Sample Capacity-Deficient Road Segments
Augusta-Richmond County, GA

Functional Classification	Road Name	Segment
Interstate	Bobby Jones Expressway (I-520)	Gordon Hwy. – Deans Bridge Rd.
Principal Arterials	Washington Road (SR 28)	Pleasant Home Rd. – Calhoun Exwy.
	Wrightsboro Rd.	Barton Chapel Rd. – Jimmie Dyess Pkwy.
	Deans Bridge Rd. (US 1, SR 4)	Lumpkin Rd. – Tobacco Rd./Gate 5
	Mike Padgett Hwy. (SR 56)	I-520 – Marvin Griffin Rd.
	Fifteenth St. (SR 4)	Government St. - MLK, Jr. Blvd.
Principal Arterial / Minor Arterial	Martin Luther King Jr., Blvd. /Olive Rd.	Twiggs St. – Tubman Home Rd.
Minor Arterials	Walton Way Extension	Pleasant Home Rd. – Jackson Rd.
	Old Waynesboro Rd.	Mike Padgett Hwy. – Engle Rd.
Collector Street	Morgan Rd.	Deans Bridge Rd. – Tobacco Rd.

Source: Augusta Regional Transportation Study, Travel Demand Model, 1999 Network

Table T-4
Performance Measures
ARTS Congestion Management System

Category	Average Speed is . . .
Not Presently Congested (NPC)	>= Posted speed limit.
At Risk of Congestion (ARC)	1% - 15% below the posted speed limit
Borderline Congested (BC)	15% - 25% below the posted speed limit
Marginally Congested (MC)	25% - 30 % below the posted speed limit
Seriously Congested (SC)	> 30% below the posted speed limit

Since the travel time surveys started in 1995, a number of roads and road segments have been documented as having congestion problems. Many factors contribute to the congestion including high traffic volumes, frequency of traffic signals, presence of major traffic generators, and frequent turning movements. Table T-5 identifies the Richmond County corridors that have consistently experienced the highest congestion over the last seven years. These include a number of principal arterials, minor arterials and collector streets. As with the V/C ratios, these congested corridors are located in the most heavily urbanized parts of the city.

Table T–5
Selected Congested Road Corridors
Augusta-Richmond County, GA

Functional Classification	Road Name	Location
Principal Arterials	Fifteenth St. (SR 4)*	Reynolds Street to Martin Luther King Jr. Blvd. (MLK)
	Thirteenth St. (SR 4) / R. A. Dent Blvd.	Reynolds Street to Wrightsboro Rd.
	Deans Bridge Rd. (US 1, SR 4)	MLK Blvd. to Willis Foreman Rd.
	Walton Way*	Gordon Hwy. to Bransford Rd.
	Washington Rd. (SR 28)	Calhoun Expressway to Pleasant Home Rd.
	Wrightsboro Rd.**	Fifteenth St. to Barton Chapel Rd.
Minor Arterials	Davis Rd. / Pleasant Home Rd. / Jackson Rd.	Washington Rd. to Wrightsboro Rd.
	Wheeler Rd.	Walton Way Ext. to Flowing Wells Rd.

Note: This list includes road segments classified at least "Borderline Congested" in AM and PM peak periods
*Part of the road classified as a minor arterial
** Congestion also evident on Saturday PM in the vicinity of Augusta Mall (Jackson Rd. to Barton Chapel Rd. segment)
Source: Augusta Regional Transportation Study, *Congestion Management System*, 2001

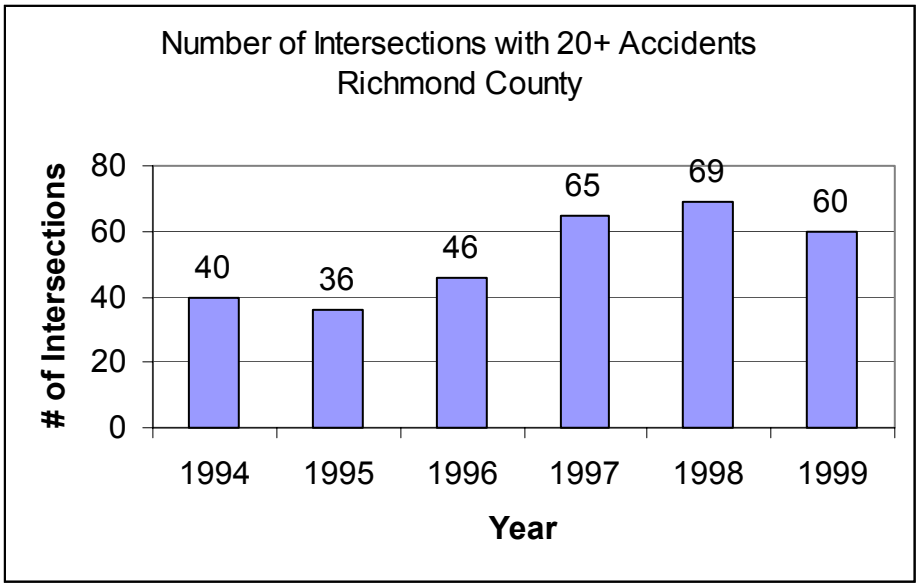
5.6.3 Intersection Problems

In any surface transportation network problems occur where major arterials intersect one another or where conditions (e.g. poor design, obstructions) make an intersection hazardous. As part of the ARTS transportation planning process, an analysis of

intersection accident data is completed annually. Accident reports are collected and analyzed for all intersections in Richmond County with 20 or more reported accidents during the calendar year. The intersections are then ranked, from highest to lowest, based on both the number of accidents and the accident rate. The accident rate is a measure of the number of accidents adjusted for the number of vehicles entering each intersection during the year. The resulting report is used to inform the public about traffic safety issues in the City, and is used by the Public Works and Engineering Department to program intersection improvements. Some of the intersections with the highest accident rates between the years 1994 and 1999 include:

- Bobby Jones Expressway @ Scott Nixon Memorial Drive
- Bobby Jones Expressway Eastbound Ramp @ Mike Padgett Highway (SR 56)
- Deans Bridge Road @ Gordon Highway
- Deans Bridge Road @ Richmond Hill Road
- Washington Road @ I-20 Eastbound Ramps
- Windsor Spring Road @ Peach Orchard Road

The following chart shows recent trends in the total number if intersections with 20 or more reported accidents.



5.6.4 Maintenance Activities

Maintaining existing roads and bridges is another integral part of the transportation system. The Maintenance Division of the Public Works and Engineering Department is responsible for the repair and maintenance of roads, sidewalks, storm drains, curb and

gutter on all county roadways. The Traffic Engineering Division is responsible for the repair and maintenance of traffic signs, pavement marking, and traffic control signals.

5.7 Transportation Plans and Projects

As mentioned in the introduction to this chapter, planning and programming improvements to the transportation system is vital to the continued growth and development of Augusta. At the same time, such improvements must be sensitive to environmental conditions, potential impacts on the human environment, and increase the mode choice for residents and visitors.

5.7.1 Road and Bridge Needs

Planning and programming road improvement projects have been an important function of government at all levels for many years. Since the mid-1960s projects involving state and federal funds have been planned and programmed through the Augusta Regional Transportation Study (ARTS). Major projects in the rural part of the county, generally including the area south of Spirit Creek, are programmed through the Georgia Department of Transportation. Table T-6 lists the major transportation projects currently programmed through ARTS and GDOT. The project list does not include lump sum funding for maintenance, safety, preliminary engineering, roadway/interchange lighting and similar types of projects on the interstate highways and major arterials. Lump sum funding is also included in both the ARTS TIP and the Georgia STIP.

The ARTS was established in response to a provision in the Federal Aid Highway Act of 1962 mandating transportation planning in urban areas throughout the country. A Policy Committee - comprised of local elected officials from the area, representatives from the Georgia and South Carolina Departments of Transportation, and representatives of the Federal Highway Administration and the Federal Transit Administration - meets quarterly to review progress on transportation projects and make decisions on ARTS planning and programming issues. A Citizens Advisory Committee and a Technical Coordinating Committee support the work of the Policy Committee. Over the years the ARTS study area has grown to include the urbanized parts of Richmond, Columbia and Aiken Counties.

The Augusta Public Works and Engineering Department is a partner in the ARTS planning process. In addition, the department, working in cooperation with the City Commission, is responsible for programming surface transportation projects involving only local funds. The Special Purpose Local Option Sales Tax (SPLOST) Program provides the City with another important tool for financing road improvements. Since 1988, SPLOST funds have paid for intersection improvements, dirt road paving projects, resurfacing, drainage, sidewalks, traffic signals, and road widening and improvement projects. SPLOST funds also paid for costs associated with larger projects involving the use of state and federal funds. Typically, the City agrees to pay for one or more of the following phases associated with a larger road widening or improvement project: engineering and design fees, utility relocation and right-of-way acquisition. Some of

these projects have been completed more expeditiously because of the availability of SPLOST funds. Examples of completed projects using SPLOST funds include the widening of Bobby Jones Expressway from I-20 to Gordon Highway, the widening of Tobacco Road, and the construction of Jimmie Dyess Parkway.

Table T-6
Programmed Transportation Improvement Projects
Augusta-Richmond County, GA

Location	Description
Interstate 20 (SR 402)	Widen bridge shoulders at Savannah River.
Interstate 20 (SR 402)	Widen to six lanes from Belair Road to Riverwatch Parkway.
Bobby Jones Expressway (I-520, SR 415)	Reconstruction of I-20 & I-520 interchange, including modifications of the I-520/Wheeler Rd. interchange and construction of a grade separation at Bobby Jones Expressway / Scott Nixon Memorial Dr. intersection.
Bobby Jones Expressway (I-520, SR 415)	Widen from Deans Bridge Road (US 1/SR 4) to Gordon Highway.
Gordon Highway (US 278/78, SR 10)	Construct median barrier from US 25 to Walton Way.
Alexander Drive	Widen to four lanes, with turn lanes at median openings, from Washington Road to Riverwatch Parkway
Interstate 20 (SR 402)	Drainage Improvements at Crane Creek
15th Street (SR 4)	Widen to four lanes and six lanes with turn lanes as needed, from Milledgeville Rd. to Government Street.
Wrightsboro Road	Widen to four lanes with turn lanes as needed, from Jimmy Dyess Parkway to I-520 SB Ramp.
Davis Road/Walton Way Ext.	Widen to four lanes with turn lanes as needed from Skinner Mill Road to Washington Road. Includes 1/2 diamond interchange at I-20.
North Leg Road	Widen bridge over CSX Railroad.
Windsor Spring Road @ NS Railroad	Reconstruct and rehabilitate bridge over NS Railroad.

Table T-6
Programmed Transportation Improvement Projects
Augusta-Richmond County, GA

Location	Description
Windsor Spring Road @ Spirit Creek	Widen bridge over Spirit Creek.
Windsor Spring Road	Widen to four lanes with turn lanes as needed from Willis Foreman Rd to Tobacco Rd.
Windsor Spring Road	Widen to four lanes with turn lanes as needed from SR 88 to Willis Foreman Road.
St. Sebastian Way/Greene Street Ext.	Modifications and additions to streets, railroad and related improvements in the vicinity of the grade crossing of the CSX Railroad and Fifteenth Street.
River Watch Parkway	Construct median barrier from Interstate 20 to Fifteenth Street.
Intelligent Transportation System	Install communications and surveillance equipment along I-20 from SR 388 (Lewiston Road) to South Carolina line
Mike Padgett Hwy. (SR 56) @ Goshen Road	Intersection Improvements
Peach Orchard Road @ Windsor Spring Road	Traffic Signal Upgrade
Peach Orchard Road (US 25, SR 121)	Widen to four lanes with turn lanes as needed from SR 88 to Burke County line

Source: ARTS Transportation Improvement Program, FY 04-06, June 2003, and Georgia State Transportation Improvement Program, FY 03-05, November 2002

A review of Table T-6 indicates that road widening projects comprise a large percentage of the planned transportation improvement projects. There are also projects designed to make better use of the existing road network. Examples of such projects are the construction of a Regional Transportation Control Center (TCC), installation of surveillance and communications equipment along I-20, intersection improvements, and traffic signal upgrades.

The TCC and related surveillance equipment are part of an Intelligent Transportation System (ITS) planned for the Augusta region. A regional ITS Master Plan was completed in February 2002. The plan included recommendations for the implementation of ITS projects in phases over the next twenty years. Recommended components include a communications network, cameras, detectors, dynamic message signs, weather detectors, traveler information system and railroad grade crossing warning detection; upgrade the

traffic control system; deployment of the Highway Emergency Response Operators (HERO on area freeways; and provide ITS for Augusta Transit.

In Intelligent Transportation Systems information technology is used to solve traffic problems. It is used to improve safety, efficiency and performance of streets and highways, vehicles, transit, and rail systems. Information comes in from the field, is analyzed, stored, and then is sent out to devices and travelers. An effective ITS saves time, money, and lives.

Another way to reduce congestion, enhance safety and make more efficient use of the road network is through access management. Access management involves changing land use planning and roadway design practices to limit the number of driveways and intersections and control vehicle turning movements. Access management also promotes a more pedestrian-friendly environment. Some of the major access management strategies include the following:

- Limit the number of driveways per lot
- Locate driveways away from intersections
- Connect parking lots and consolidate driveways
- Provide residential access through neighborhood streets
- Increase minimum lot frontage on major streets
- Promote a connected street system. Avoid networks that force traffic onto arterials
- Encourage internal access to outparcels located on large commercial lots
- Regulate the location, spacing and design of driveways

5.7.2 Rail Transportation Needs

For many years, informal agreements and local ordinances have been employed to restrict the speed and hours of operation of freight trains passing through downtown Augusta. In the 1970s the Federal Highway Administration completed a railroad demonstration plan for Augusta. The purpose of the plan was to improve the relationship between the railroad and the city and improve the operation of the transportation network.

The plan recommended the relocation of the Southern Railroad (now Norfolk Southern) and Seaboard Coast Line Railroad (now CSX Railroad) main lines and yards out of downtown, the construction of new grade separations, and upgrading the Belt Line on the Georgia Railroad (now part of CSX Railroad). In keeping with the intent of the study, the recommended improvements were identified as "usable segments", meaning that they could be implemented and provide a benefit to the transportation network even if the remainder of the recommended projects were not completed.

As it turned out, only some of the usable segments have been constructed in the twenty-plus years since the demonstration plan was completed. Four grade separations were constructed during the 1980s. Three are located on the CSX lines and include the elevated section of the Calhoun Expressway (SR 28) between 12th and 15th Streets, the Fifteenth Street overpass near the Harrisonville Yard, and the Highland Avenue overpass.

A fourth overpass is located on Walton Way above the joint Norfolk Southern/CSX main line on Sixth Street. A fifth overpass, to span the CSX line between Broad Street and River Watch Parkway, is planned as part of the St. Sebastian Way/Greene Street Extension project.

The Norfolk Southern and CSX main lines continue to bisect downtown Augusta and the main railroad yards are still in the same locations. The Belt Line is still in need of the upgrades recommended as part of the demonstration project. There is renewed interest in relocating the Norfolk Southern main line out of downtown, and upgrading the Belt Line. In 2001, the City and the railroads worked together to purchase and install remote-controlled switches at four locations on the main line tracks in downtown. The switches reduce the delay caused by trains stopping to allow engineers to manually throw a switch.

Passenger rail service in Augusta ended a number of years ago. However, rapid population growth in Georgia in recent decades has rekindled interest in both commuter and intercity passenger rail service. In 1997, the *Intercity Passenger Rail Plan* was completed for the Georgia Department of Transportation. The *Plan* collected information on current intercity travel within the state, made forecasts of future travel by all modes and examined the costs and benefits of intercity rail passenger service in a number of possible corridors.

The *Plan* recommended the phased implementation of an intercity passenger rail network on existing freight railroad lines. First-priority corridors identified would connect Atlanta with Macon, Albany, Savannah and Jacksonville, FL. Second-priority routes would connect Atlanta with Augusta, Columbus and Greenville, SC. As stated in the *Plan* summary, the first-priority corridors were chosen "to maximize both the financial operating surplus from the lines and the net benefits of service to the State." The study concluded that the operating surplus generated by the first-priority routes could be used to subsidize the second-priority lines, none of which were forecast to generate a profit.

The *Plan* forecast annual ridership on the Atlanta-Augusta line at 131,000 one-way trips in the year 2020. Estimated capital costs of the Atlanta-Augusta line were $213 million at the time the study was completed. Capital costs included work on tracks and ties, signaling improvements, provision of flashing lights and safety gates at all at-grade crossings, a station and parking, maintenance facilities and trains. The Atlanta-Augusta line was forecast to operate at a loss of $3.0 million in 2020. Issues that need to be resolved related to implementation of the entire network include identifying funding sources and support, protecting the railroad rights-of-way from encroachment, and reaching agreement with Norfolk Southern and CSX regarding use of their rail lines.

The Georgia Rail Passenger Authority, the Georgia Regional Transportation Authority and the Georgia Department of Transportation are working together to implement the *Plan*. Activities being worked on at the present time include an environmental review of the Macon corridor, acquisition of property in Atlanta for a multi-modal terminal, use agreements with the freight railroads, and improving the safety of at-grade crossings.

5.7.3 Airport Master Plan

In 2001, the Augusta Aviation Commission hired the firm of Black and Veatch to develop a 20-year master plan for Augusta Regional Airport. Many factors prompted the study, among them the age and condition of airport facilities and declining enplanements. Major components of the study included an inventory of existing conditions, aviation demand forecasting, facility requirements, analysis of alternatives, an environmental analysis, airport plans, and a financial plan. The draft plan projected that enplanements will reach 730,000 by the year 2020 (there were 167,000 enplanements in 2001), and outlined three alternatives for improvements at the airport. The preferred alternative recommended the construction of two parallel runways (one of which is the existing 8,000 foot runway), and a midfield terminal, at an estimated cost of $122 million ($156 million with inflation). The preferred alternative generated a great deal of discussion among Aviation Commission members and throughout the community.

In September 2002 the Federal Aviation Administration (FAA) issued a conditional approval of the airport master plan. The FAA endorsed the new midfield terminal, airplane parking areas and taxiway recommend by the master plan. Plans to construct a runway parallel to the existing 8,000-foot runway will be put on hold until enplanements increase enough for the FAA to support the construction. The FAA questioned the projections of annual enplanements contained in the plan, and instead used its more conservative forecasts of 280,000 passengers in 2010 and 336,000 in 2020. The FAA also endorsed plans to abandon the airport's crosswind runway. The FAA's action renewed the debate about the type and extent of improvements needed at Augusta Regional Airport.

In February 2003 the Aviation Commission voted to re-evaluate the master plan due to a lack of state and federal funding for such projects. The Commission later voted to approve construction of a new terminal at the airport’s current terminal location. The estimated cost of such a terminal is $30 million. A consulting contract for development of a new terminal layout plan was pending at the end of June. The layout plan will establish a concept for the new terminal and related improvements, provide a cost estimate for the facilities, and include financing options for the project.

5.7.4 Bicycle and Pedestrian Plans

Several off-road bicycle and pedestrian projects have been implemented in recent years. Most have been financed with federal Transportation Enhancement funds and matching local funds. The City's Recreation and Parks Department constructed paved walking trails at several parks, including one at Lake Olmstead connecting to a new pedestrian bridge over the Augusta Canal. The Canal Bridge is one of several projects being implemented by the Augusta Canal Authority for the benefit of users. A project involving substantial improvements to the towpath is under construction. The project includes on-road connections from the Canal to the downtown Riverwalk and Dyess Park, as well as the towpath improvements. The towpath is adjacent to the Canal Authority's Interpretive Center, which opened in April 2003. Access to the canal is also

possible via a pedestrian bridge near Eisenhower Park. This bridge is scheduled to be upgraded in the future.

Phase I of a "history walk" on the Augusta State University (ASU) campus was completed in the spring of this year (2003). Phase II includes the design and construction of the remainder of the history walk and a separate walking/bicycle path from the ASU campus to the ASU athletic complex on Wrightsboro Road. Both phases have been awarded TE grants and ASU is providing local matching funds.

Planning for bicycle and pedestrian facilities in Richmond County is progressing. The original ARTS Bikeway Plan (c.1994) included recommendations for a bicycle safety and awareness campaign, including bicycle facilities in highway widening projects, and making the existing transportation network more bicycle-friendly. The Bikeway Plan identified the Augusta Canal, the Savannah River levee, and several interconnected streets in the Summerville/Academy Baker area as potential sites for bikeways. In 1997, the list of potential bike corridors was expanded significantly as part of the update of the ARTS Long-Range Transportation Plan. In Richmond County, thirty-five corridors were identified as potential sites for either on-road or off-road bicycle facilities. Some could be done in conjunction with planned road widening projects. The following page includes a list of the projects.

The 1994 Bicycle Plan was updated in January 2003. The new plan provides a blueprint for development of bicycle and pedestrian facilities over the next 20 years. The plan includes an inventory of the current regional bicycle and pedestrian network, design standards for new facilities, a list of 194 recommended projects (with cost estimates), and strategies for implementing the projects. Of the total recommended projects, 47 are proposed in Augusta-Richmond County at an estimated cost of $ 25.8 million.

The plan was developed with a public involvement program that included a bicycle and pedestrian steering committee, public meetings, a project newsletter, web page updates, and media outreach. The project steering committee included representatives from the Recreation and Parks Department, the Neighborhood Alliance, the Safe Communities Coalition, the Augusta Canal Authority, and bicycle and pedestrian organizations.

5.7.5 Public Transit Needs

The APT Transit System Analysis (November 2001), prepared by Manuel Padron and Associates, proposes several improvements to the transit system. Proposed improvements include modifications to 8 existing routes, the addition of a new cross-county connector route, and extending service to Fort Gordon and North Augusta. The changes will be phased in over a five-year period.

The proposed improvements to existing service emphasize: 1) increasing productivity where possible, 2) maintaining current levels of service for most fixed routes, and 3) enhancing service on the routes with the potential for attracting additional riders. The

addition of a cross-county route, and extension of service to Fort Gordon and North Augusta, will connect areas with high population and employment densities.